



The Extended Gateway of Tanjung Priok Eastern Ports Workshop

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Tanjung Priok, Indonesia's major container port

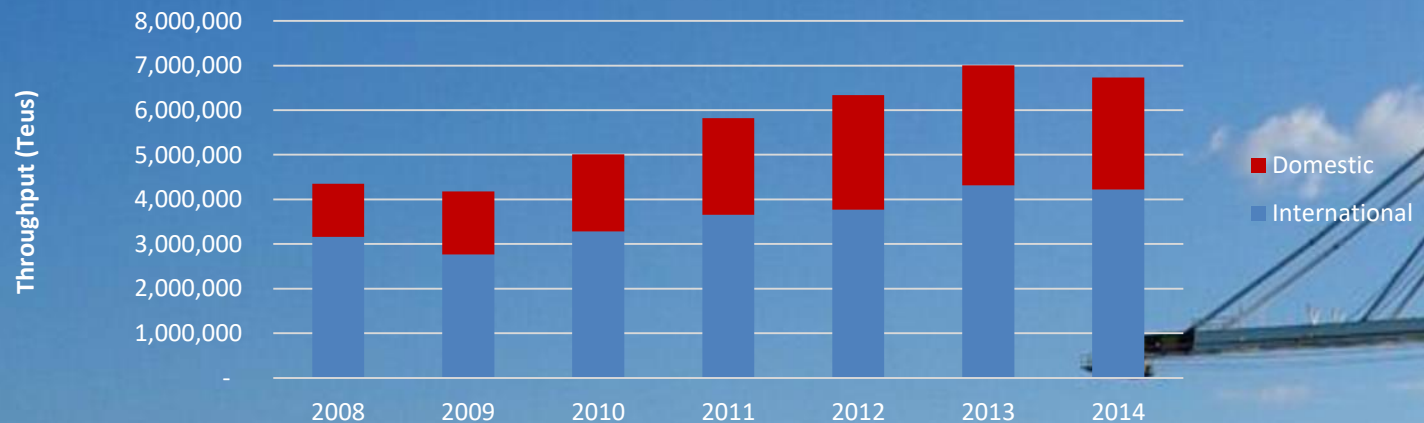
Tanjung Priok Port is Indonesia's major port

This role will continue for the foreseeable future

It has grown strongly and this will continue for many years

The main drives: industry and consumption in western Java

Tanjung Priok Container Volume 2008-2014



Where do the containers want to go?

Drewry (2015) reported Tanjung Priok container volume came from 5 areas:

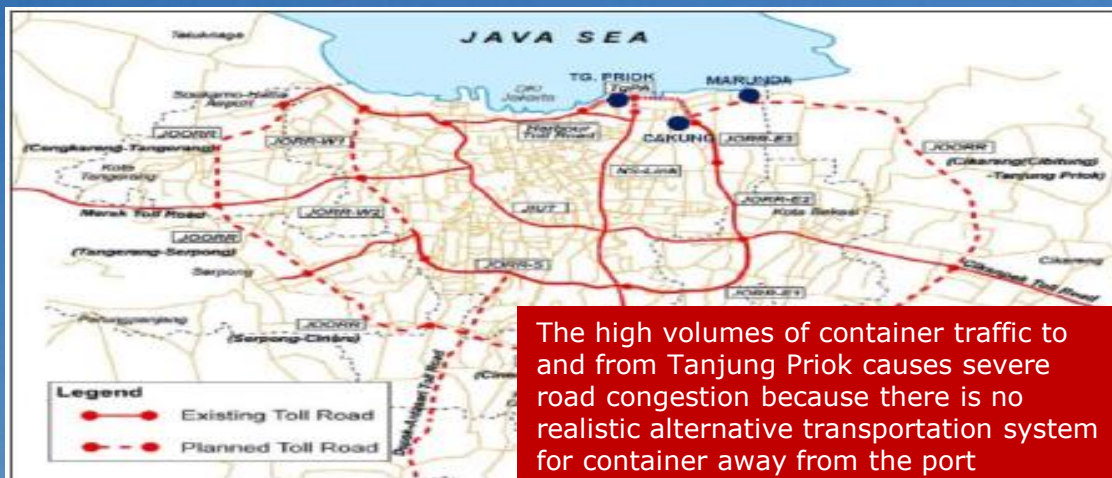


Meanwhile according to LAPI ITB Study (2012), around 70% of container throughput in Tanjung Priok generated from Eastern Area and South Area of Jakarta

How do containers get delivered today?

97%+ of containers that leave Tanjung Priok for delivery into its immediate hinterland leave the by truck. This is a major constraint on the port.

Strategic road links for Tanjung Priok

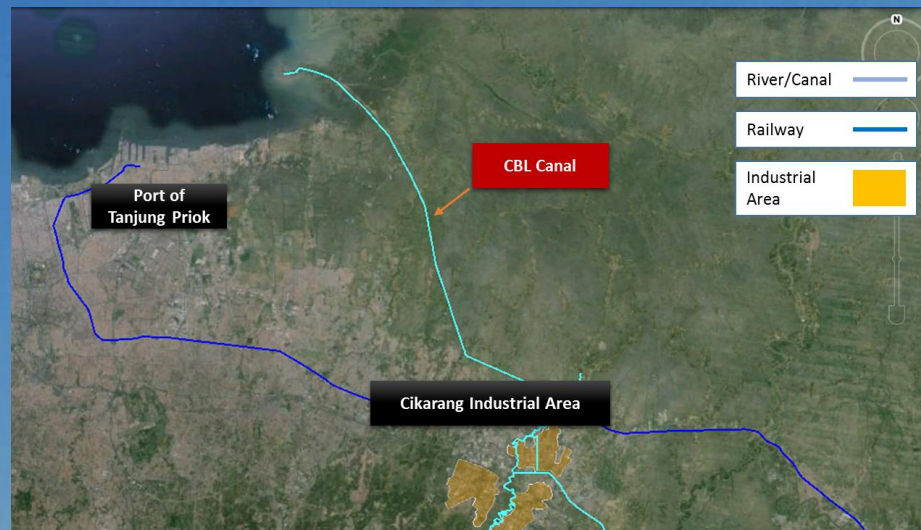


Rail constrained:

- Passengers favored over cargo
- Level crossings slow traffic upgrade cost US\$ 2-3 billion
- Rail terminals reduce terminal storage capacity (operating at 95%+)
- Not adequate cargo paths (limit 80,000 TEU?)

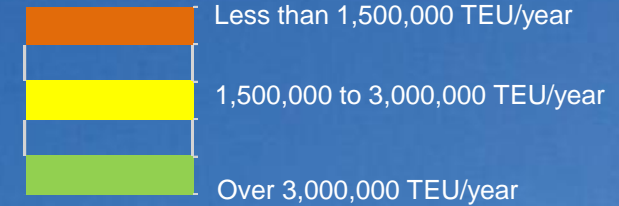
Cikareng Bekasi Laut (CBL)

To reduce the problems an inland waterway linking Tanjung Priok to the main part of its hinterland has been proposed. This would take containers off the road and move them by water to where they want to be!



How many containers may want to use CBL?

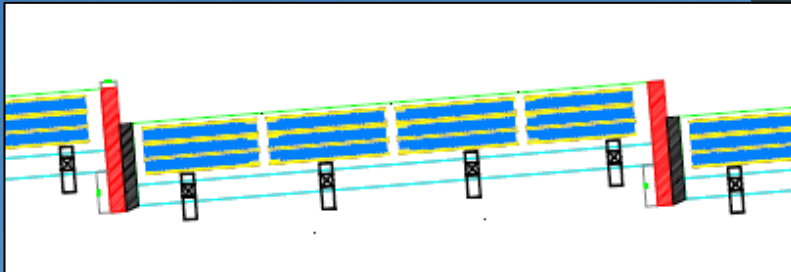
Scenario	Growth Rate	Eastern Jakarta Market	Inland Waterways Marketshare
Low	4%	35%	30%
Medium	7%	55%	45%
High	13%	70%	55%



Inland waterways Market Demand Forecast

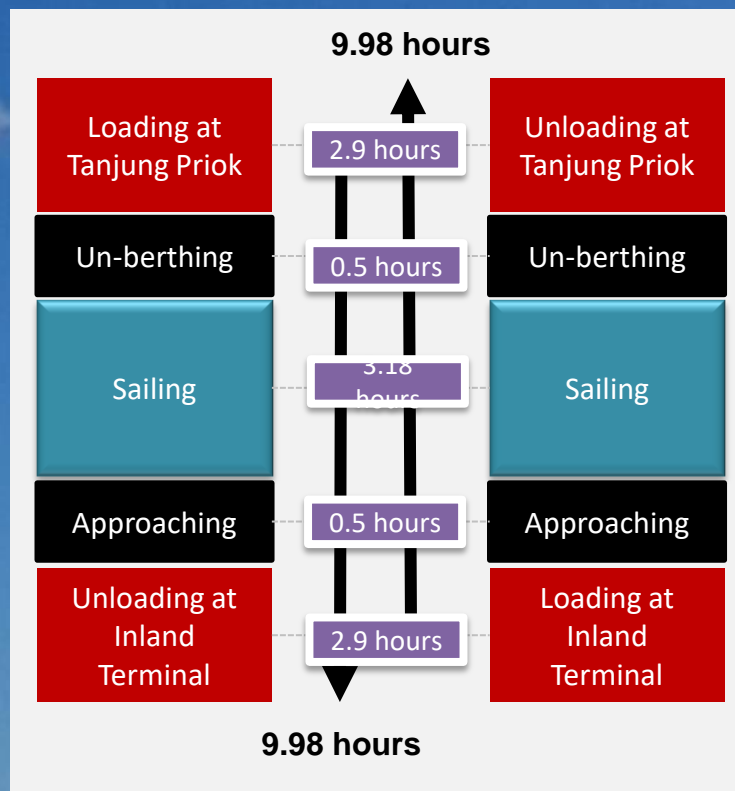
Scenario	Growth Rate	Eastern Jakarta Market	Inland Waterways Marketshare	2020	2030	2045	
1	Low	Low	Low	825,500	1,221,941	2,200,647	
2			Medium	1,238,250	1,832,912	3,300,971	
3			High	1,513,416	2,240,226	4,034,520	
4		Medium	Medium	Low	1,297,214	1,920,194	3,458,160
5				Medium	1,945,821	2,880,290	5,187,240
6				High	2,378,226	3,520,355	6,339,960
7		High	High	Low	1,651,000	2,443,883	4,401,295
8				Medium	2,476,499	3,665,824	6,601,942
9				High	3,026,833	4,480,452	8,069,040
10	Medium	Low	Low	979,083	1,926,005	5,313,908	
11			Medium	1,468,625	2,889,007	7,970,862	
12			High	1,794,986	3,531,009	9,742,165	
13		Medium	Medium	Low	1,538,559	3,026,579	8,350,427
14				Medium	2,307,839	4,539,869	12,525,641
15				High	2,820,692	5,548,728	15,309,116
16		High	High	Low	1,958,166	3,852,010	10,627,816
17				Medium	2,937,250	5,778,015	15,941,724
18				High	3,589,972	7,062,018	19,484,330
19	High	Low	Low	1,358,275	4,610,755	28,836,907	
20			Medium	2,037,412	6,916,132	43,255,361	
21			High	2,490,170	8,453,051	52,867,664	
22		Medium	Medium	Low	2,134,432	7,245,472	45,315,140
23				Medium	3,201,647	10,868,208	67,972,710
24				High	3,913,125	13,283,365	83,077,757
25		High	High	Low	2,716,549	9,221,510	57,673,815
26				Medium	4,074,824	13,832,265	86,510,722
27				High	4,980,340	16,906,101	105,735,327

Barge Terminals



Cycle time for of barges

- Average cycle time a barges: 19.96 hours \approx 24 hours
- Easy assumption one (1) roundtrip/barge/day



Length of the canal

- Jakarta bay: 15 km
- Delta: 1.7 km
- Cikarang Bekasi laut: 22km

Average barge speed

- Jakarta Bay: 8 knot
- Delta: 5 knot
- Cikarang Bekasi Laut: 6 knot
- Knot to km conversion: 1.852

Average sailing time 3.18 hours

Unloading and Loading

- TEU per barge on arrival/departure: 144
- TEU factor: 1.2
- Loading factor: 0.8
- Terminal performance: 40 box/barge/hour

Average loading or unloading time : 2.4 hours

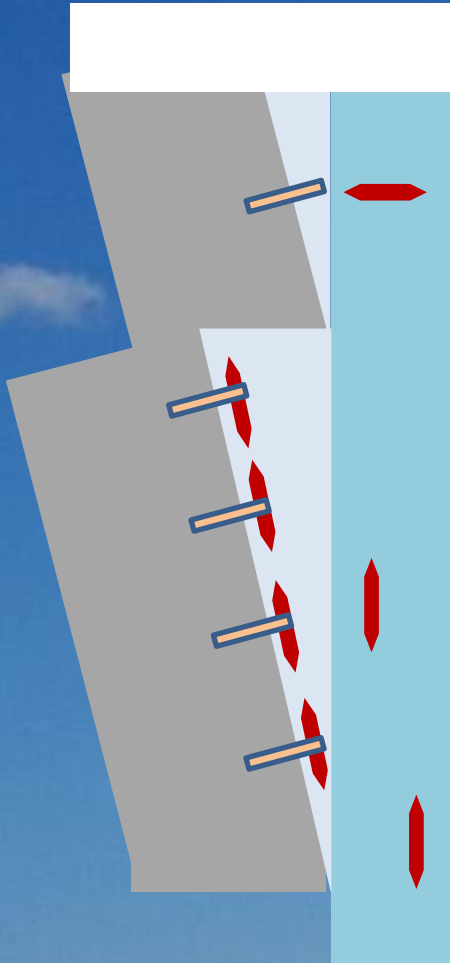
Preparation

- Unloading/loading preparation: 0.5 hours
- Unberthing preparation: 0.5 hours

Approaching time: 0.5 hours

Un-berthing time: 0.5 hours

How many barges we need for 3m TEU?



Assumptions

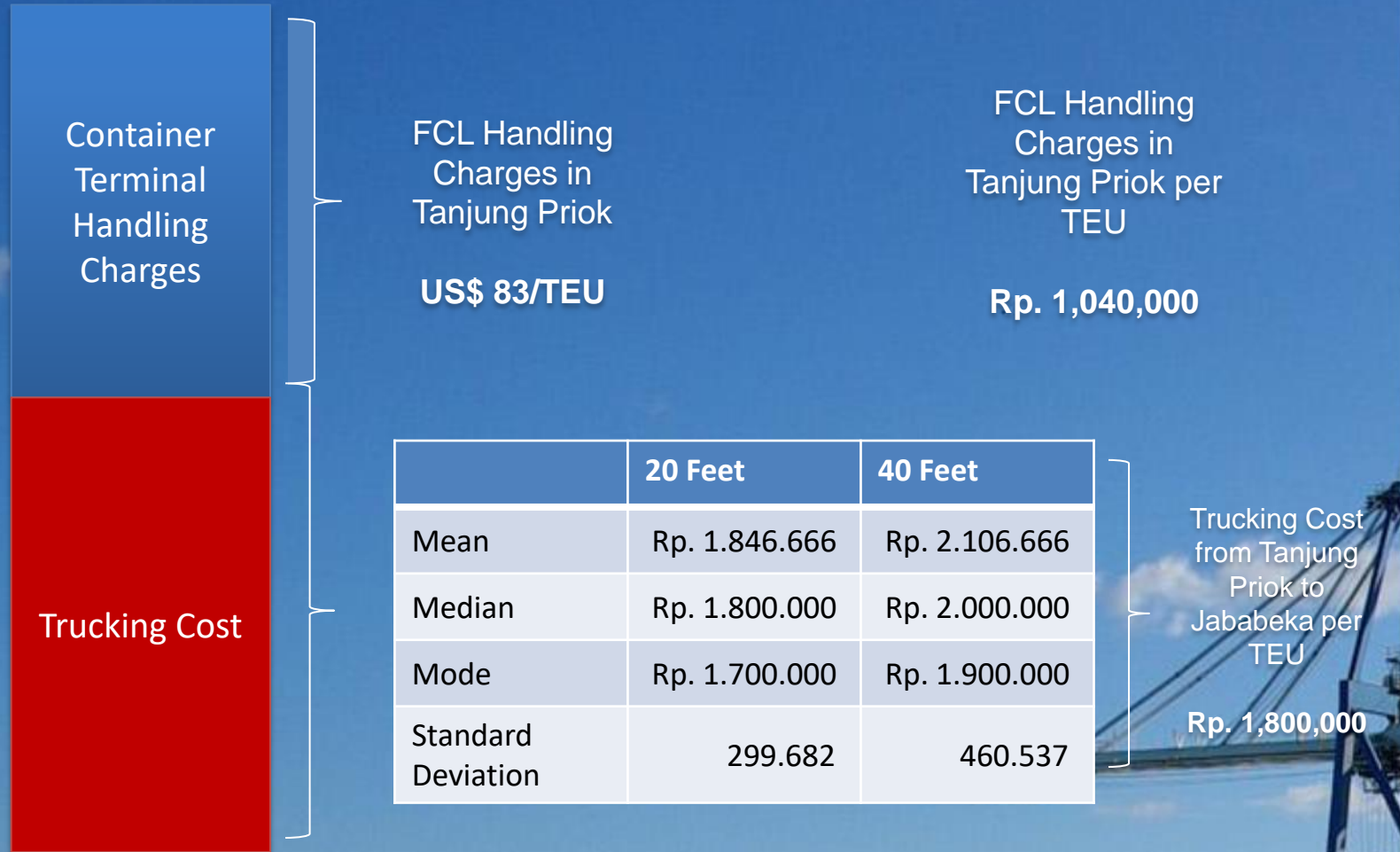
- Number of days: 365
- Capacity per barges: 144
- Load factor: 80%
- Utilization: 75%
- Inward flow: 50%
- Outward flow: 50%

Number of barges

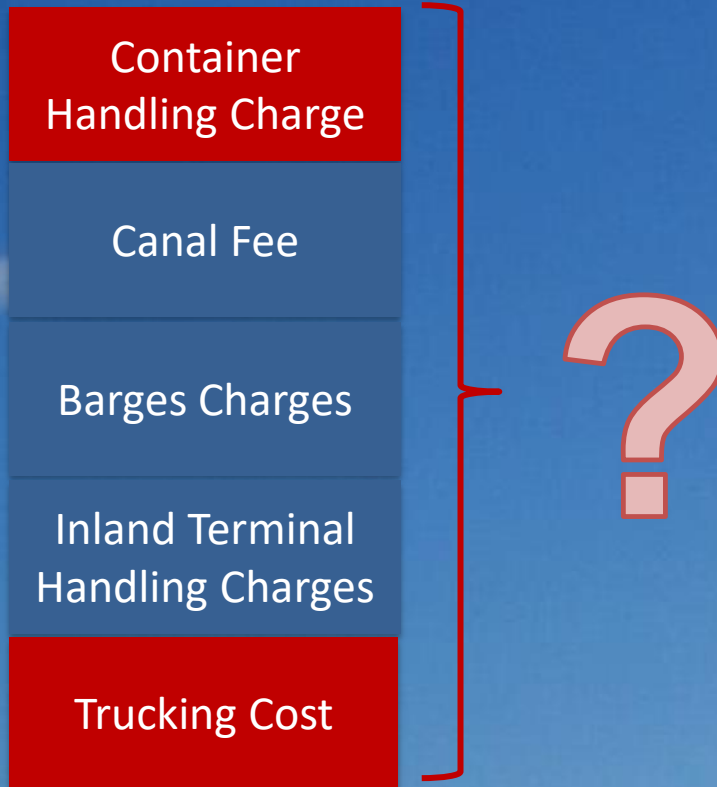
- Number of barge trips in a year: 17,300
- Number of barges: 48 barges

24 barges at berth, 24 barges in transit/maintenance

What does it cost today to deliver a container?



A container delivered by CBL would cost?



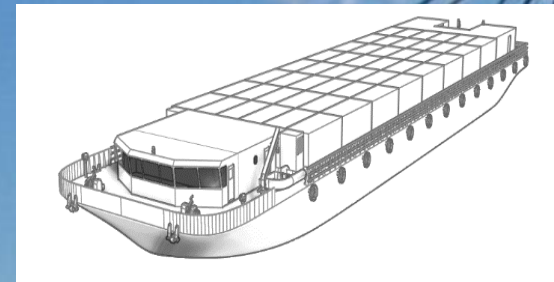
Inland waterways transport cost components

Barges Cost Assessment

Assumptions:

Container Handling Charges
Canal Fee
Barges Charges
Inland Terminal Handling Charges
Trucking Cost

- 1 (one barges)
- Self Propeller Barges
- Barge Capacity
 - 144 TEUs
 - 105,120 TEUs transported every year
- 25 years of useful life
- Operating costs:
 - Crew Salaries
 - Vessel maintenance
 - Insurance
 - Fuel
 - Misc



Inland Terminal Handling Cost Assessment

Assumptions

- 1 (one) berth, 1(one) crane for serve 1 (one) barge
- 50 TEU net berth rate using quad spreader
- Includes investment for backup area
- 20 years useful life

Container Handling
Charges

Canal Fee

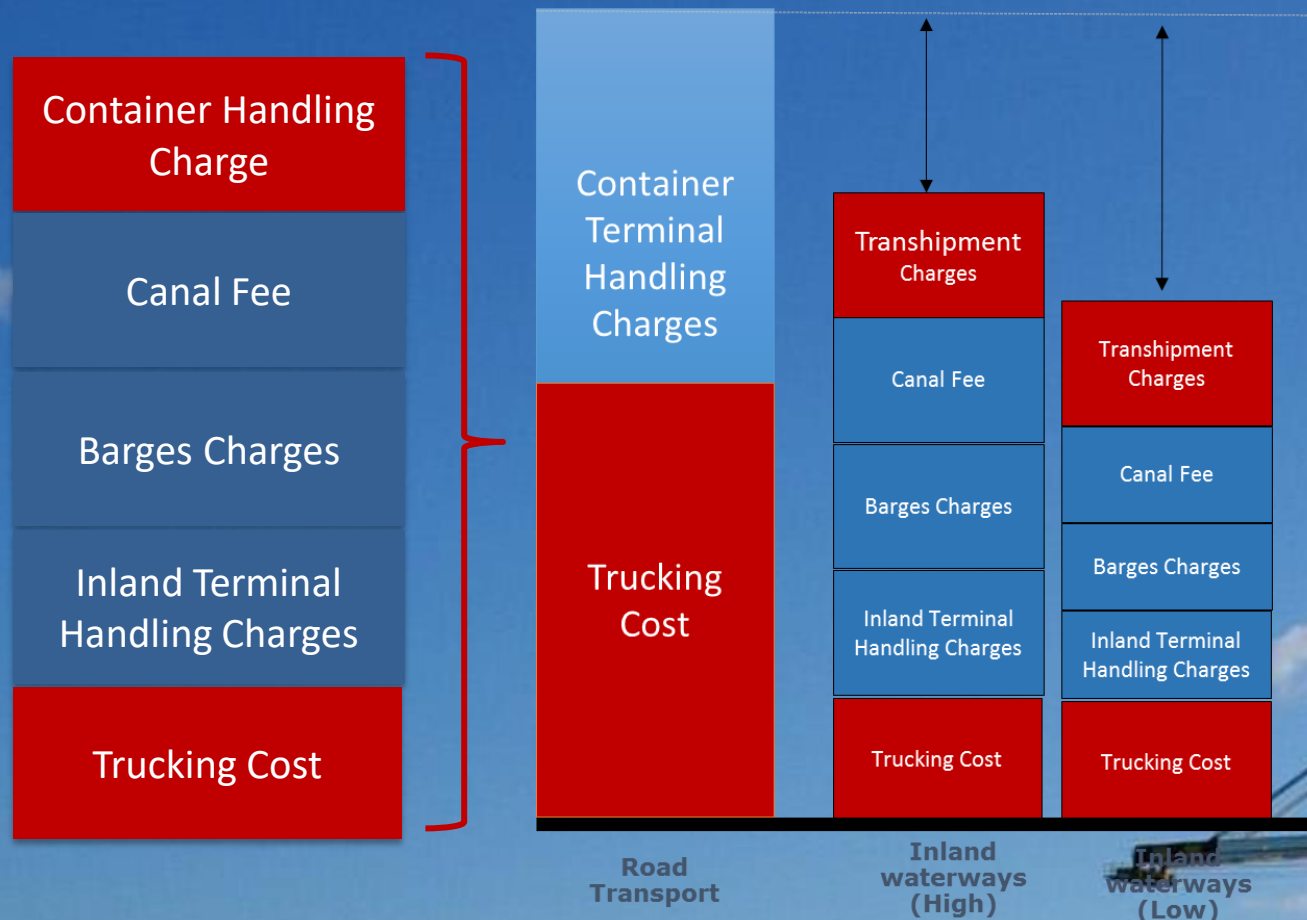
Barges Charges

Inland Terminal
Handling Charges

Trucking Cost



Road and Inland Waterways Cost Comparison



Potential Joint Venture Partners



Eastern Ports Project

Opening up Eastern Indonesia



Project Objectives

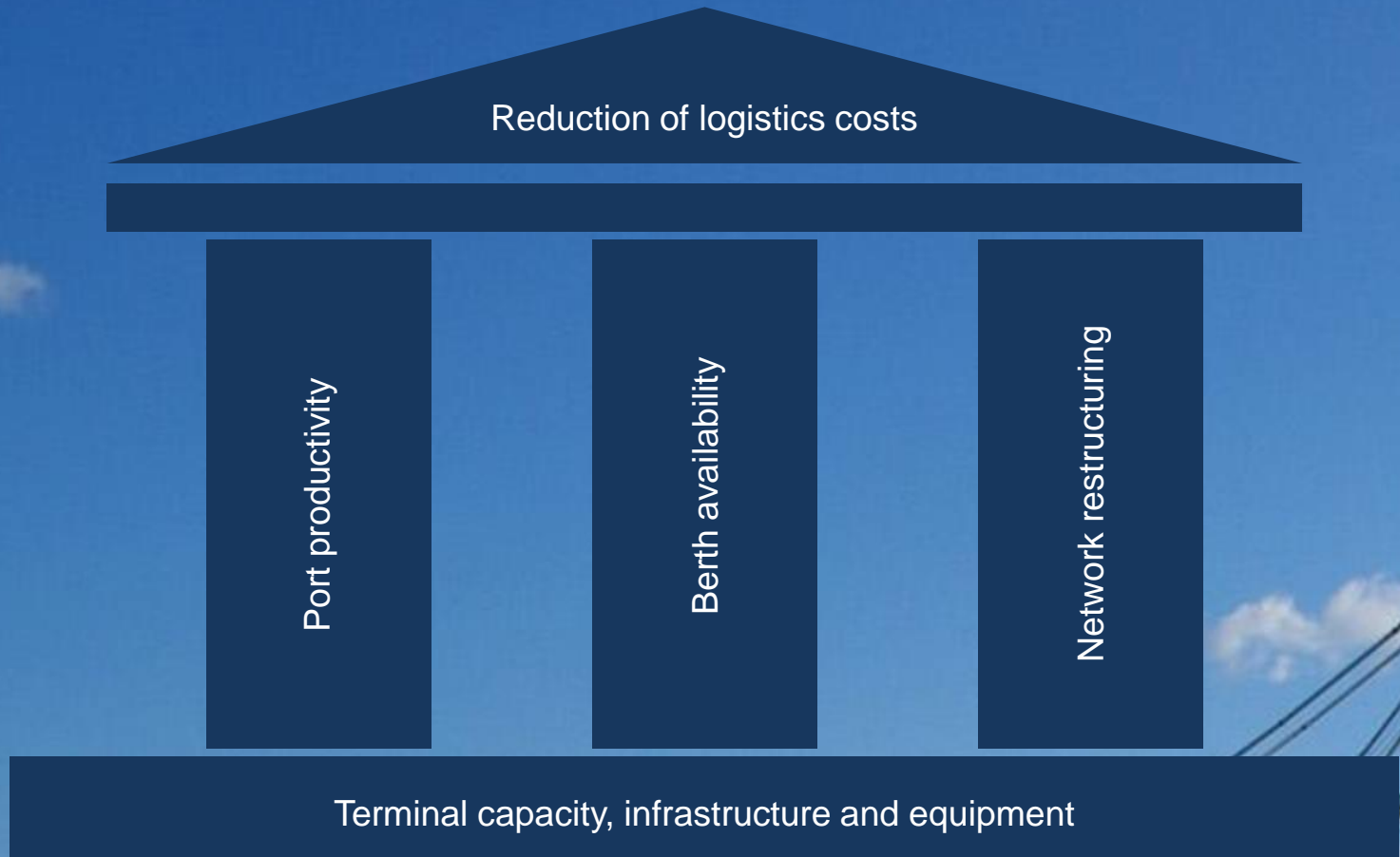
Objectives

- Deliver infrastructure that drives growth in Eastern Indonesia
- Create a network of ports across Eastern Indonesia
- Ensure the network is sustainable
- Make a return on equity invested

Implementation guidelines

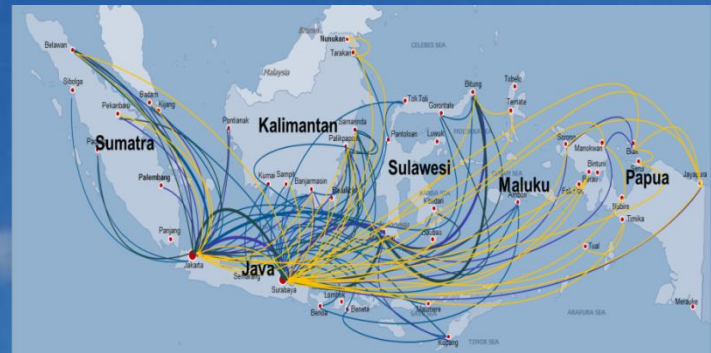
- Deliver project in compliance with the laws of Indonesia
 - Target the use of International Best Practice
 - Engage and energise support for project across Eastern Indonesia
 - Start construction in 2015
 - Secure financial close as soon as practical
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Project Architecture

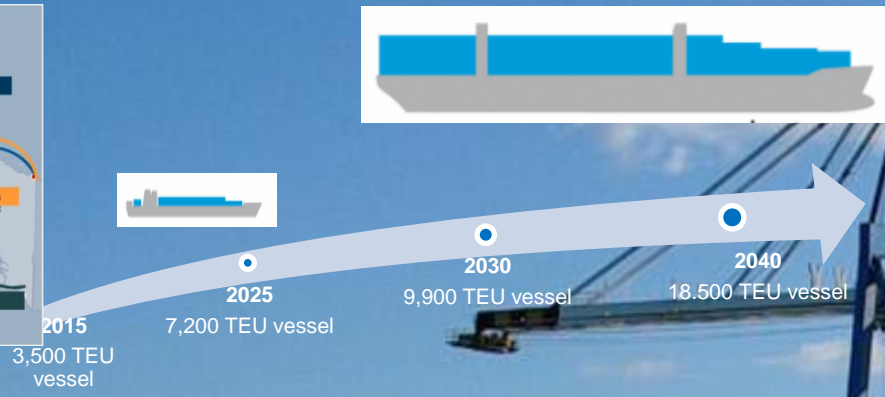
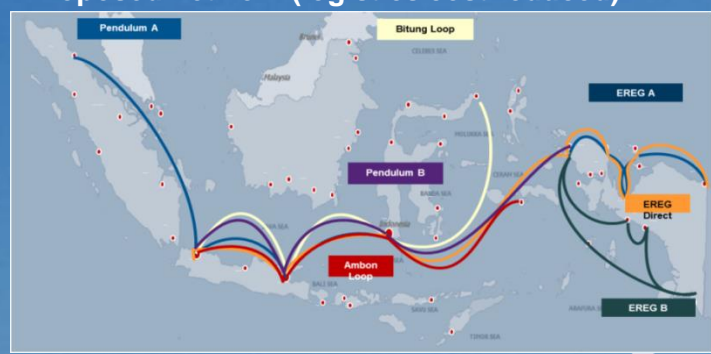


Network Restructuring

Current network (No reduction of logistics cost)



Proposed network (logistics cost reduced)



Source: Company schedule and Drewry Maritime Research

Which ports should be in the project?

Port Selection Criteria

The objective : to define the scope of the overall project by focusing on the most feasible ports

Five criteria have been used to shortlist the ports. The selection has been done by applying these criteria in logical steps:

Step 1:

- Removing those ports that have been defined as PL (local) ports under the DGST's port hierarchy as these ports are small ports with not enough traffic.
- Finally, PU (main port), PP (collector port), PR (regional port) were considered

Step 2: Remove those ports which are dedicated passenger ports

Step 3: Remove ports with insignificant volume based on the team's knowledge and site visit reports

Step 4: Remove those ports with annual throughput less than 100,000 Tons cargo or 5,000 TEU's container volume. The throughput information was collected from MOT, Pelindo IV and III, CEIC, BPS and Site visits

Step 5: Group those ports that are in geographical proximity ports and with significant presence of TERSUS or TUKS

Port Screening Process

Initially **748** ports in the Eastern region were longlisted. These ports are sourced and consolidated from:

- DGST/DGLT
- CEIC
- IPC's initial list of 35 ports
- Team decision based on site visits

After removing **510 local ports**, **238 ports** were left in the list

2 ports were identified as passenger ports among the 238 ports and were removed. **236 ports** left.

13 ports without significant volume were removed. **223 ports** left.

Among the 223 ports, **158 ports** did not meet the throughput requirement. **65 ports** were left in the list

20 port groups were shortlisted excluding

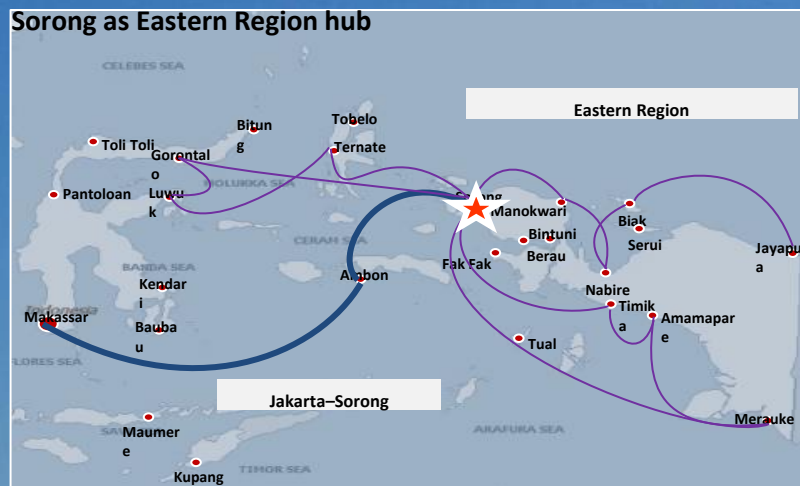
- 17 Pelindo Ports
- 5 ports with several Tersus

Further consideration required

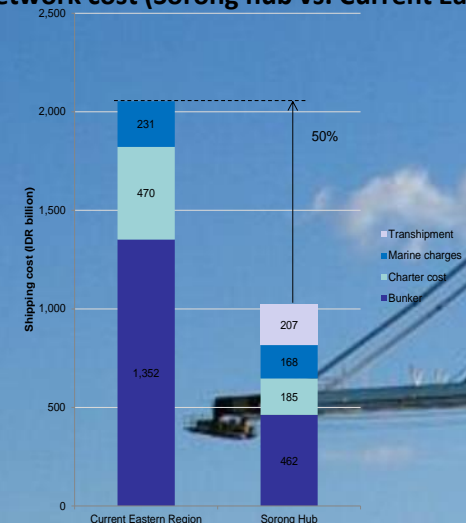
- There are five ports with several Tersus (Terminal Khusus) therefore, these need careful evaluation what fraction of total port throughput is routed through public ports.
- The main criteria of less than 100,000 tons and 5,000 TEUs is too small for a port from return on investment perspective.

Sorong as a hub

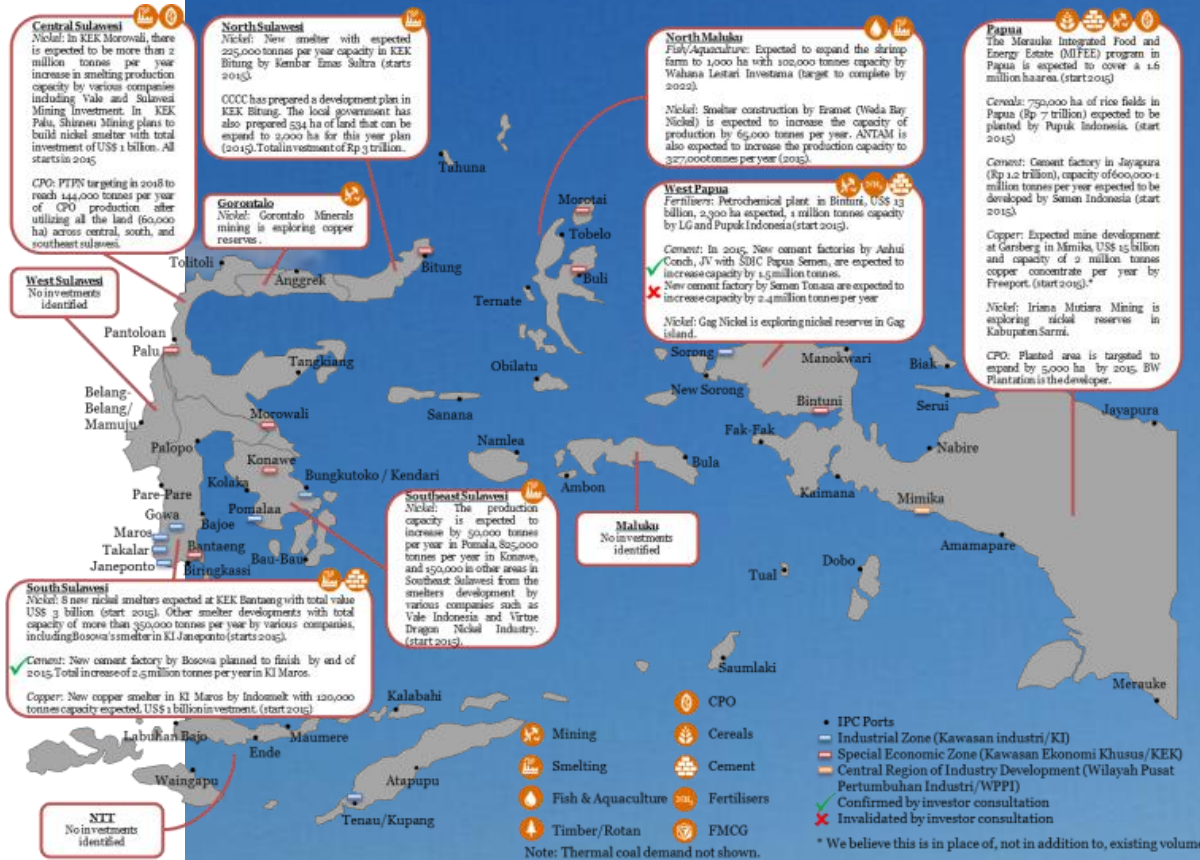
- Market size of the transshipment hinterland are determined by container gateway volume handled at the feeder ports in the Eastern Region
- The feeder ports have infrastructure limitations, which provides the opportunity for shipping lines to use larger ships to tranship via Sorong, therefore saving liner network costs
- The market share that can be captured by Sorong will depend on a combination of factors including: Pricing, productivity and infrastructure. These will determine lines' approach to network strategy in the Eastern Region and the share moving by transshipment.



Liner network cost (Sorong hub vs. Current Eastern Region)



Inorganic Growth

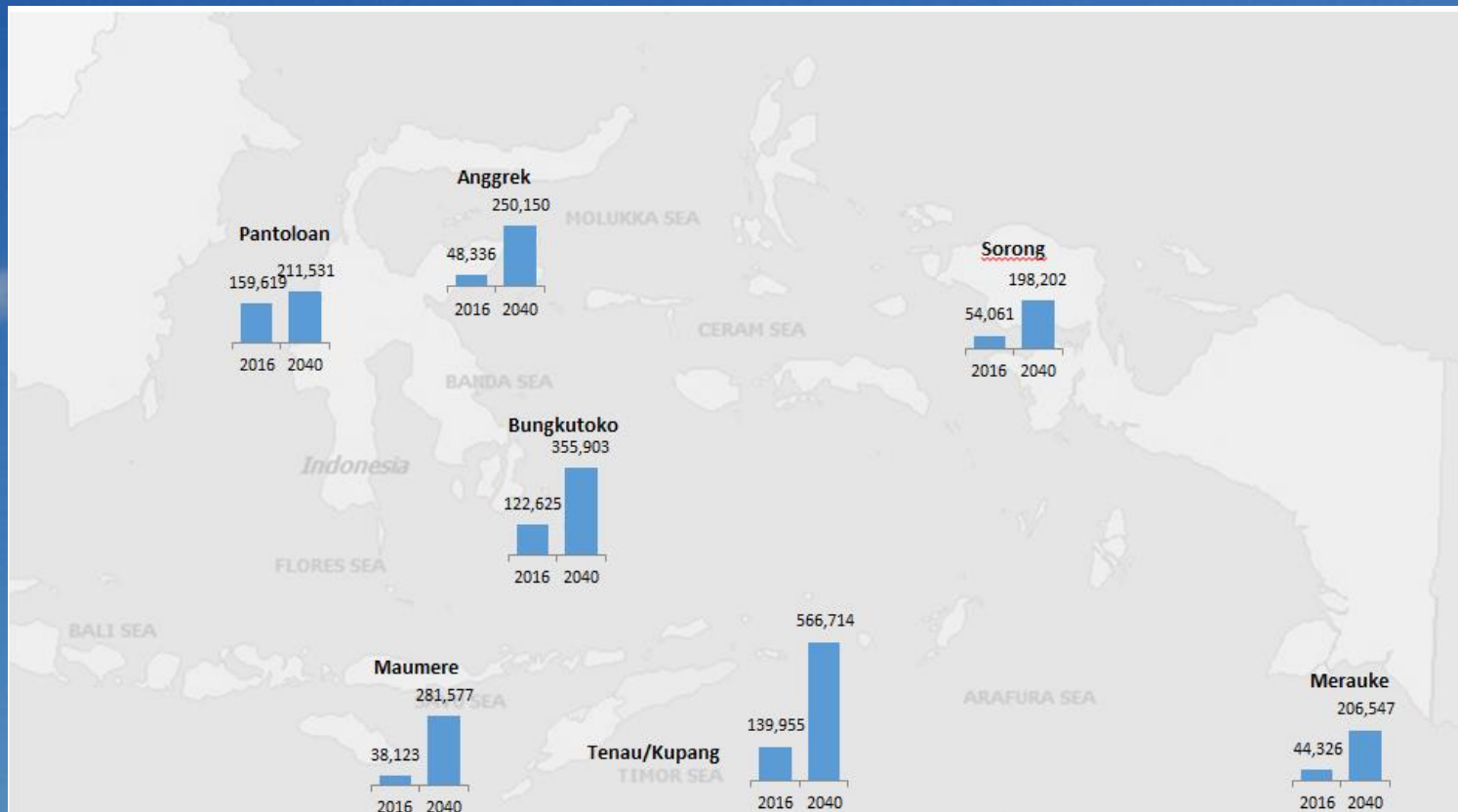


Key Points:

- Investments are spread across Eastern Indonesia provinces but none identified in West Sulawesi, Maluku, and Nusa Tenggara Timur (NTT).
- Overall, announced investments in Eastern Indonesia are dominated by Nickel sector, which will increase the smelting capacity by more than 5 million tonnes per year.
- For the cement sector, new factory plans in Manokwari (West Papua) and Bosowa (South Sulawesi) are already confirmed by investor consultation, which will increase production capacity by more than 4 million tonnes per year.
- Papua is the province with investment plans from the most varied sectors, including cereals, cement, copper mining, nickel mining, and palm oil.
- Most of the investment/expansion plans are expected to start in 2015.

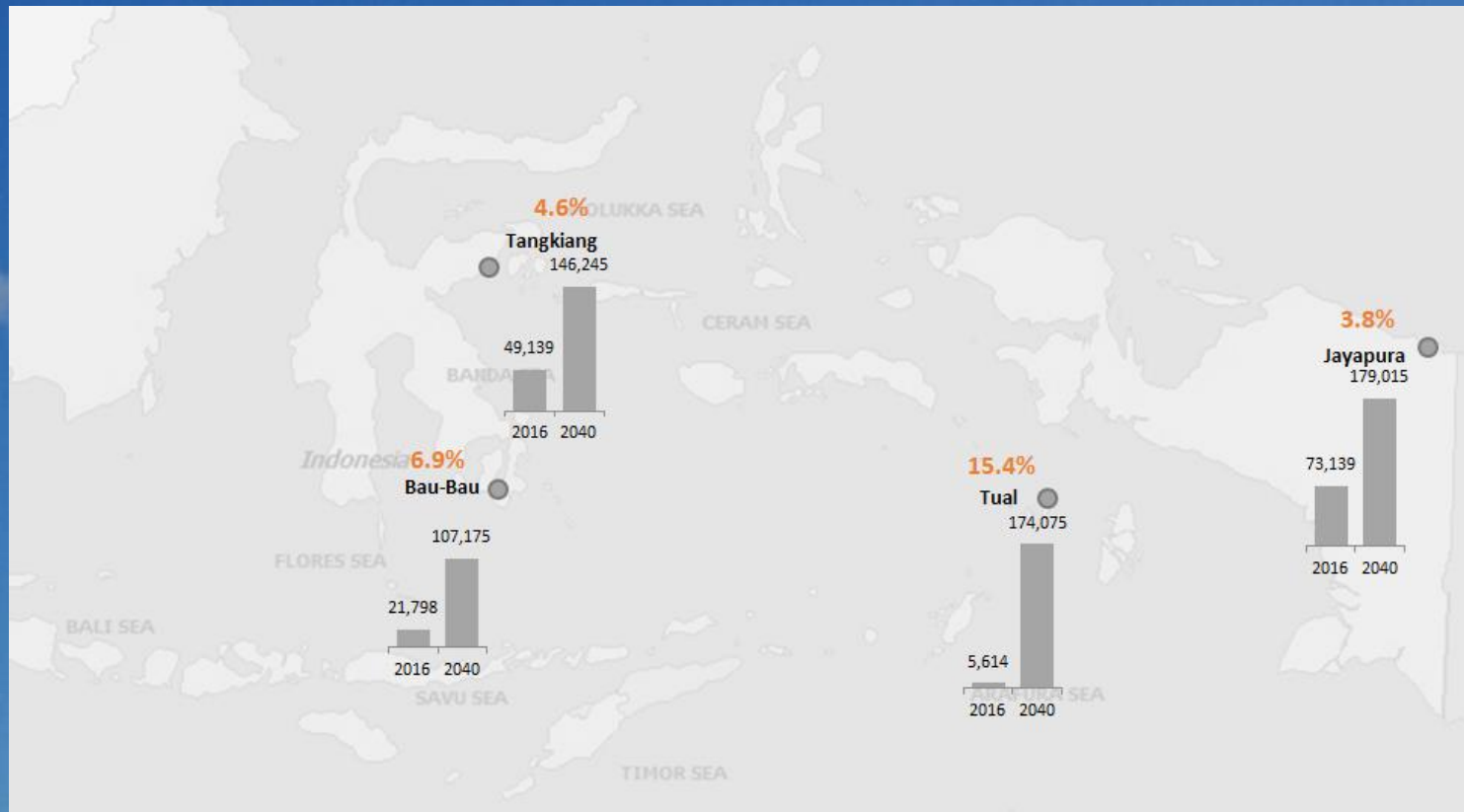
• IPC Ports
 - Industrial Zone (Kawasan Industri/KI)
 - Special Economic Zone (Kawasan Ekonomi Khusus/KEK)
 - Central Region of Industry Development (Wilayah Pusat Pertumbuhan Industri/WPPI)
 ✓ Confirmed by investor consultation
 ✗ Invalidated by investor consultation
 * We believe this is in place of, not in addition to, existing volumes

Container throughput: >200,000TEU



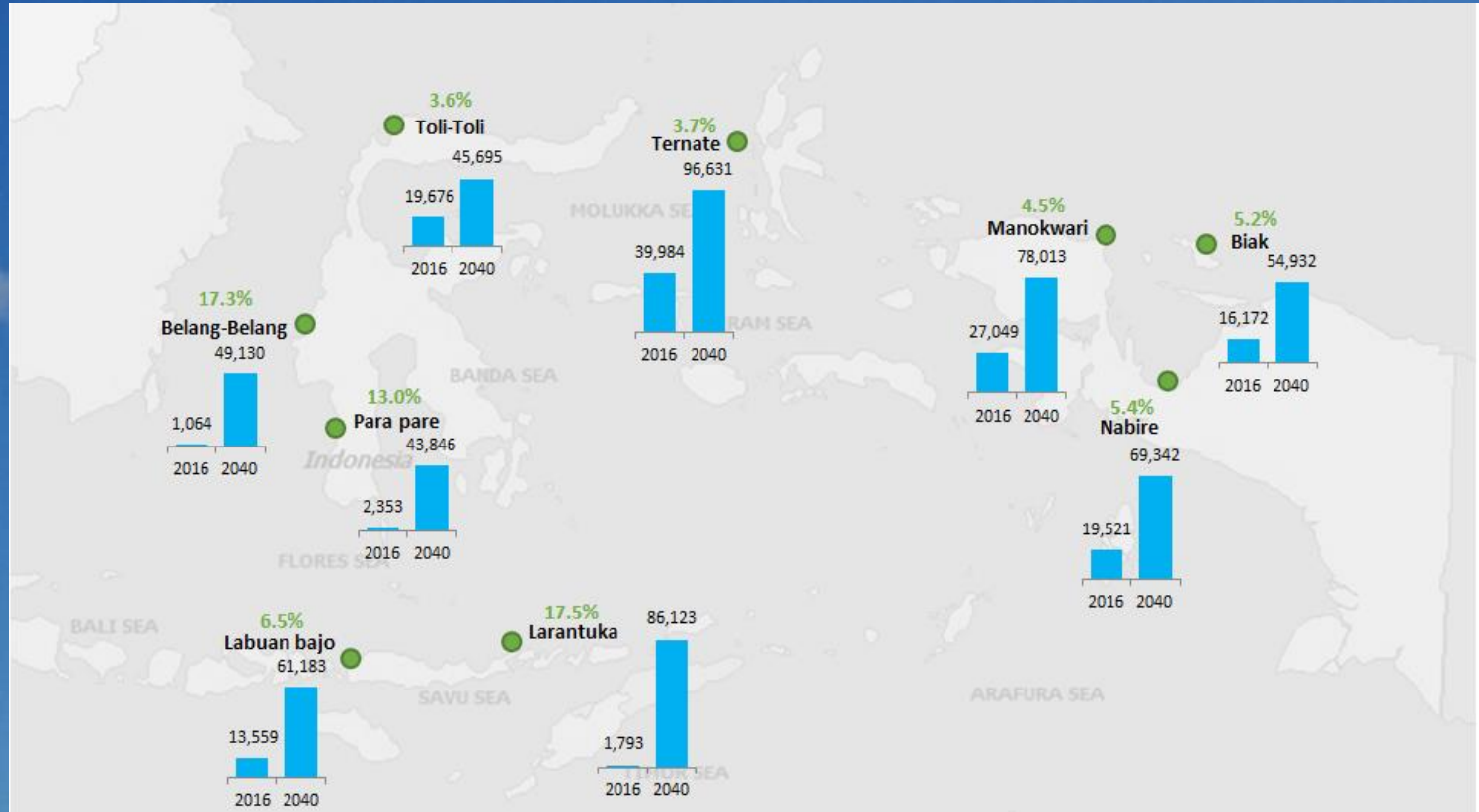
Note: The percentage number near port name indicates compounded annual growth rate between 2016 and 2040.

Container throughput – 100,000 to 200,000 TEU



Note: The percentage number near port name indicates compounded annual growth rate between 2016 and 2040.

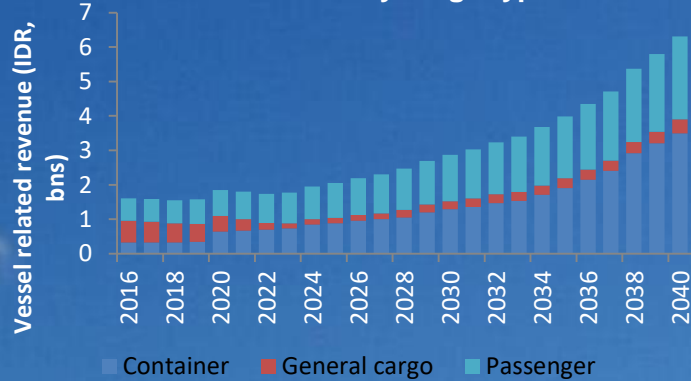
Container throughput – 50,000 to 100,000 TEU



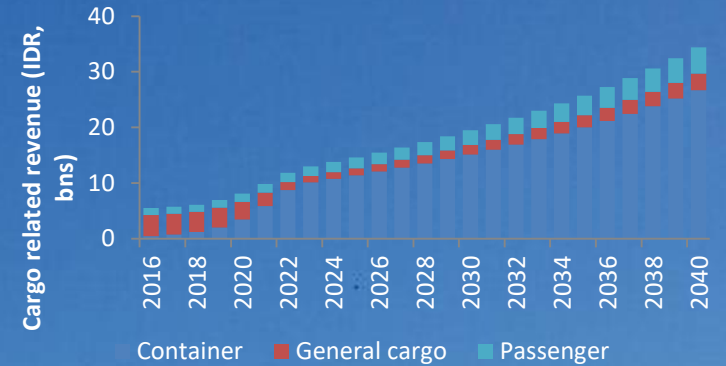
Note: The percentage number near port name indicates compounded annual growth rate between 2016 and 2040.

Revenue forecast

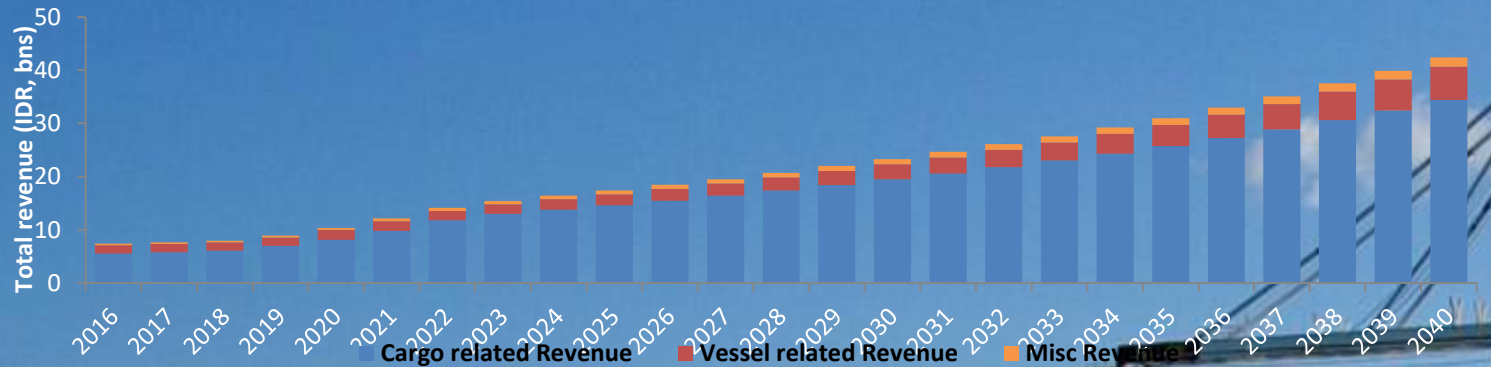
Vessel related revenue – by cargo type



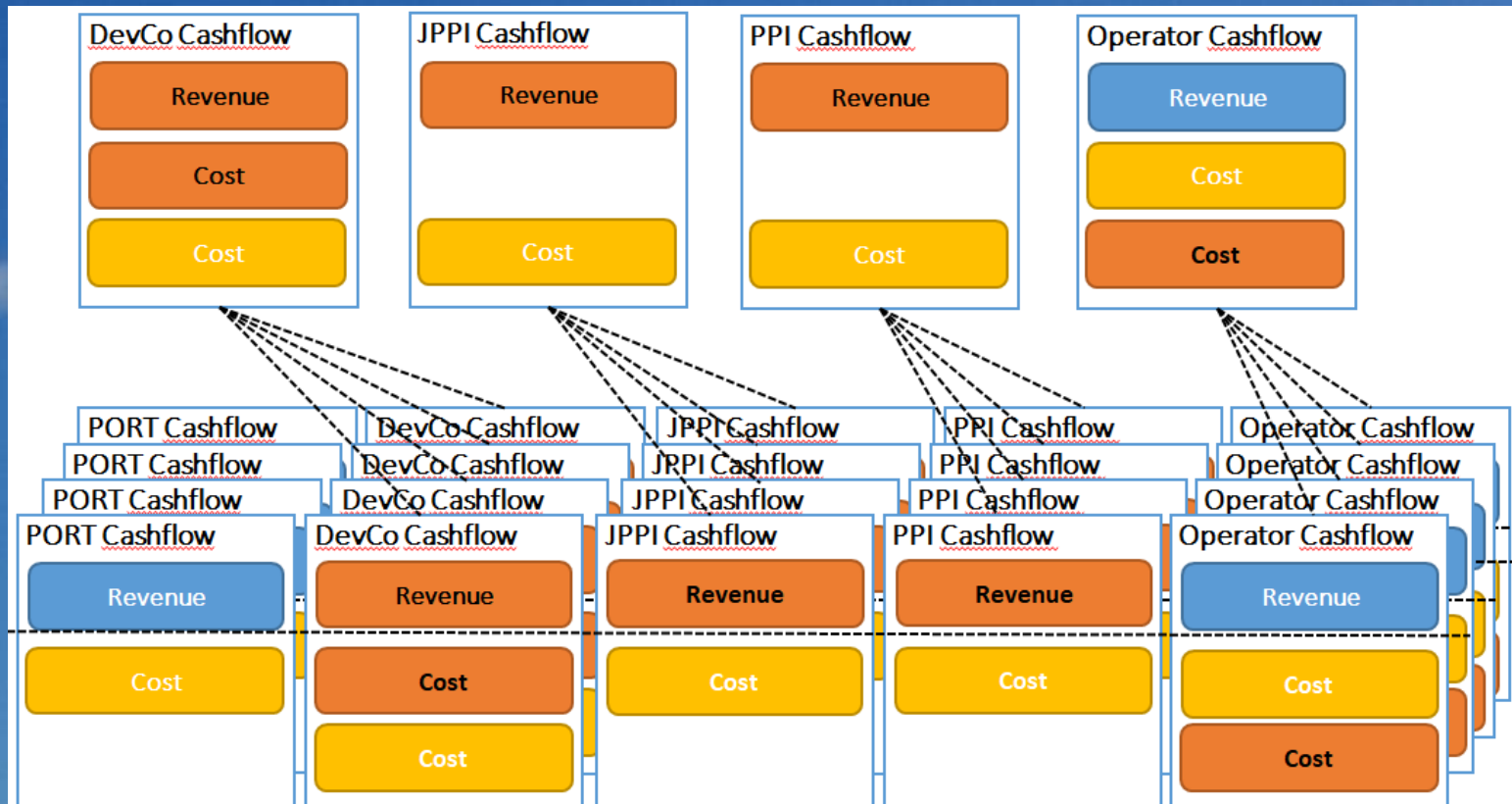
Cargo related revenue – by cargo type



Total revenue – by revenue type



Implementation of Project Structure in the Model



Thank You

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